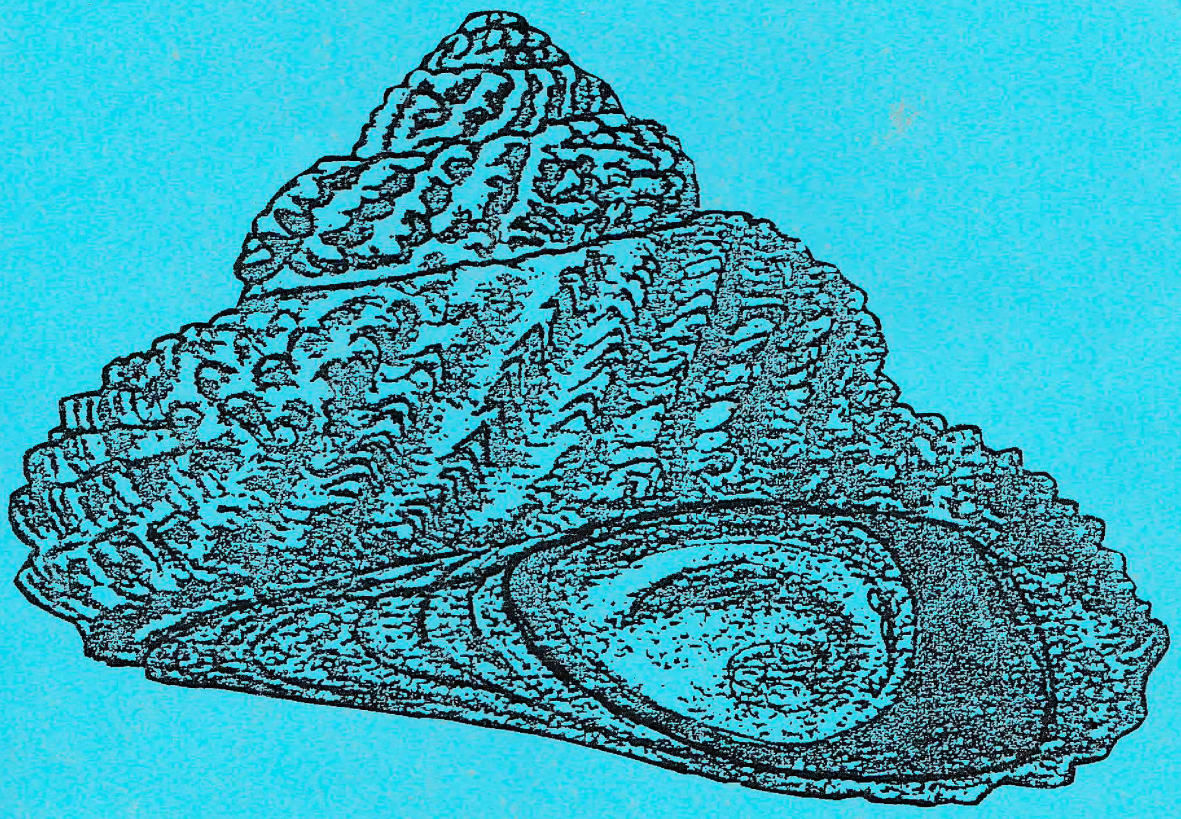
# COOKIA



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# SHIPS AND SHELLS

**(Copy of a talk given to the Wellington Shell Club on 25 August 1988)**

**Capt. E. Busby**

The subject of my talk this evening is "Ships and Shells". You may well ask what possible connection there can be between them, apart from the obvious one that a large number of shells and most ships like to live in water, and that some shells attach themselves to the underside of ships and go joy-riding around the world, much to the delight of the shells and the annoyance of the shipowner who has to pay to have them scraped off at regular intervals. The connection lies in the large International Company we know as the Shell Oil Company, who, for nearly a hundred years has been naming its ships after shells.

The Shell Company was started in the mid 19th-century by a Londoner called Marcus Samuel. He had inherited a modest fortune from his father who had traded in the Far East, specialising in the import to the U.K. of fashionable boxes decorated with shells, and I suspect also, trading in *Trochus* shell and trepang. Marcus extended and developed this Far-Eastern trade, and built a strong base in Japan, from whence he exported coal. It appears that he was inevitably drawn into the oil business with the discovery of oil in the Netherlands' East Indies (now Indonesia).

In 1892 a ship loaded a cargo of oil at the Black Sea port of Batum, destined for Singapore and Bangkok and in doing so created 3 "firsts":

1. It was the first oil cargo following an agreement between Czarist Russia and the Shell company.
2. It was the first ship to carry a bulk dangerous cargo through the Suez Canal, having been specially built to comply with the stringent requirements of the Suez Canal Company Authorities.
3. She was the first "Shell" tanker. Her name was SS ***Murex***.

She was followed closely by a ***Clam*** and a ***Conch***. So the pattern was set, and is still followed to this day. Dozens, if not hundreds of shell names have been used, some two or three times over, on successive generations of ships.

Now, the English sea-transport branch of Shell was, in 1939, known as the "Anglo-Saxon Petroleum Company" and it was this company that I joined on 1 September 1939, thus beating World War II by just forty-eight hours. As an Apprentice Officer I received the princely salary of sixty pound - not a month or a year, but spread over four years! Luckily for us perhaps, the war came along and we were given a bonus of six pound per

month for the first two years of apprenticeship, and twelve pound per month for the latter two.

I was appointed to my first ship at Hebburn-on-Tyne on 11 September. A standard vessel of her time; very small by present day standards, capable of loading twelve thousand tons of petrol and travelling at a speed of about 11.5 knots. Ironically she had been built in Germany in 1936 at a place called Vegesack near Hanover. I well remember the two tiny shells in their glass case in the Officers' dining saloon. The ship's name was ***Tornus***. We have a ***Tornus*** shell in New Zealand found in deep water near the Three Kings Islands. They are described as minute, thin, white, and subglobose and they are only about 1.5 mm high.

During my term on the ***Tornus*** we had plenty of adventures including many unpleasant ones due to the war, and we ran mainly between the West Indies (Curacao, Trinidad, or Aruba), and Britain's river Mersy, via Halifax N.S. for Trans-Atlantic convoy.

After two years I went on leave, though in wartime England this was not necessarily a pleasant experience. Travel was restricted and there was no petrol to run a car. I spent most of the two months at my parents' home near Salisbury, Wiltshire, where we could distinctly see and hear the nightly pounding of Southampton by the German Luftwaffe.

It was, I think with relief, that I went to my next ship which I joined at Birkenhead on the river Mersy. She had been built there in 1939 and though much the same size as the ***Tornus*** was more comfortable. The ship was named MV ***Diloma***. Our New Zealand ***Diloma*** are described as depressed globose, bluish to almost black, smooth, except for weak spiral striations, about 20 mm high and found on the open coasts of both islands where they browse on kelp on the Upper Tidal Zone. More abundant in the south, as they appear to prefer the cooler water. The ship's name shell had by now, retreated into a little glass-fronted niche in the bulkhead of the Officers' dining saloon and had its own illumination.

The ***Diloma*** was not a very happy ship, mainly because she appeared to be prone to accidents large and small, culminating in her being torpedoed in the mid-Atlantic in March 1942. She did not sink and there were no casualties. We made it safely to Halifax, N.S., where the vessel received temporary repair, thence to Baltimore, USA, for a more permanent job. On return to the U.K. (during which time we had yet another serious accident), I left the ***Diloma*** at Liverpool and went home for a short leave.

My next ship was the MV ***Carelia.*** Built in Holland in 1937, a fine comfortable vessel which had started life under the Dutch flag but was one of a batch which changed over to the

Red Ensign before the start of World War II. The ***Carelia*** is a Philippine land snail about 30 mm high and does not have any relatives in New Zealand. Not a very well known shell, I had to ask Bruce Marshall's assistance to refresh my memory and he kindly showed me the museum's specimen. My stay in the ***Carelia*** was notable mainly for the completion of a six week voyage from Beaumont, Texas, to Capetown, via the Panama Canal and Cape Horn. We rounded the Cape on Christmas Day 1942. It was cold and bleak. I left the ***Carelia*** at Port Said in February 1943 having accrued sufficient sea time to sit examination for Second Mate's Certificate, and went back to Suez by rail, to join another ship ostensibly on her way back to Britain. This was the MV ***Spondilus*** (sic) a very old ship dating from 1927. The ***Spondilys*** is an Indo-Pacific, northern Australian shell. The Thorny Oyster is a magnificent shell, not found in New Zealand except in fossil form.

Eventually the ***Spondilus*** tottered into North Shields in November 1943, and I left her, my apprenticeship completed. Having obtained my Certificate, my first appointment as Third Officer was to a ship called the ***Cliona*** which I joined at Thames Haven. I was never able to recall the ***Cliona*** shell, and it was not until a few weeks ago that I was browsing through Morton and Miller "The New Zealand Seashore" when I found a picture of ***Cliona*** - a yellow sponge! How this came to rest amongst the shells I do not know. Fortunately I did not stay on the ***Cliona*** very long, for on arrival at New York for dry docking, I left this old and rather uncomfortable ship for one even older. This was the MV ***Megara*** - another non-shell! Her sister ships were called ***Mirza*** and ***Maja***, and exactly what significance these names have, I do not know. The ***Megara*** had been built in France in 1929 but her claim to fame was that in the pre-war years, she had been rebuilt to carry Sulphuric Acid and LPG, as well as oil. Probably the only ship like it in the world at the time, and appropriately valuable to the allied cause.

Six weeks later and in Curacao, I left the ***Megara*** and was transferred to the CSM, a Shell subsidiary which ran a fleet of 30 small tankers under the Dutch flag, bringing crude oil from the Maracaibo Lagoon to Curacao for refining. Popularly known as the "mosquito fleet", these ships were given the names of Spanish girls (not a shell amongst them nearer than Conchita)! A nice traditional way of naming ships. My 3 were the ***Marsella, Ramona,*** and ***Rita.***

In order to go back to England when my leave was due, I was transferred to the MV ***Northia***, a war-built ship familiar in layout and very comfortable. The ***Northia*** shell belongs to the family Buccinidae, and is found in North America.

After about 5 weeks at home, I was sent to Liverpool to join a ship called the ***Hopemount***, another non-shell, this ship was a total stranger which the Company had acquired during the

war. Her one claim to fame was that she was fitted out for "oiling at sea", that is, refuelling warships whilst underway at sea. After the war she was renamed ***Kelletia***, so she did eventually become a "shell".

December, 1945: the war was over when I went to Liverpool to join the ***Narica***. She was almost identical to the ***Northia***, but slightly older. The ***Narica*** is another very small, thin, white shell belonging to the Tornidae family, but apart from the fact that it was classified by A. Orbigny in 1842, I have no further information. We arrived in Barry Wales during February 1946, and I paid off in order to study for my next senior certificate.

In New Zealand we have had 3 ships with shell names: ***Paua, Tanea,*** and ***Maurea***, all names of local significance and in keeping with the Shell tradition.

The Shell Fleet was divided up alphabetically into "Classes", but the system was very flexible. Thus the ***Tornus*** and her sister ship ***Taron*** were known as the "German T's", and the ***Thiara, Torinia, Tibia,*** and ***Taria*** were the "Big T's" (they were slightly larger than the standard ships in the fleet), but possibly the best known were the "T2's". During the war, the USA had built no less than 481 turbo-electric tankers known as T2's. After the war, many of these ships were sold off to private ownership. Shell bought 18 of them, and very appropriately, renamed them with shell names beginning with the letter "T". Such names as ***Thelidomus, Trigonisimus, Thallepus,*** and ***Tresus*** appeared. I am unable to fit a shell to any one of these names, and to me they sound ugly and unmellifluous.

And, yes, there was a "Z" class. Two ships (***Zenatia*** and ***Zaphon***) were built in 1957 and sailed under the Red Ensign. It is here that a New Zealand angle enters the story.

During the late 1960's, the Auckland Harbour Bridge was widened. The method adopted by the Japanese contractor was to have sections of bridge built in Japan and transported to New Zealand on the decks of cargo ships. On arrival in Auckland, these sections were lifted off using powerful floating cranes and placed on a Dumb Barge. Now, a Dumb Barge is one that has no inbuilt means of propulsion, but is towed around by tugs. It can be of any size from quite large to very small. I was Master of the tanker ***Athelviscount*** at the time, and I was walking from the ship (berthed at Wynyard Wharf) towards Auckland city, along the western viaduct. The big barge (whose Japanese name I have long since forgotten) was at the time having a rest alongside the viaduct and on looking up at her bows, under a layer of paint, I was able to descry her original name. It was ***Zaphon***.

I imagine the ***Zaphon*** was on her way to the scrap yard when

the Japanese contractor bought her, lopped off the engines and accommodation, and turned her into a barge suitable for the Auckland Harbour bridge project.

# TONGAN SHELL COLLECTING TRIP (29 JULY - 12 AUGUST 1987) -IMPRESSIONS AND RESULTS.

**E. Andrews and M. Taylor**

The Kingdom of Tonga, aptly named by Capt Cook "The Friendly Isles" showed Meg, Verna (Tauranga), Gracie, and me that friendliness from the moment we landed at the airport on Tongatapu after 10 pm and found that one of my checked bags had not arrived. A taxi driver agreed to wait to take us to our guest house about an hour's drive away without extra charge - during this time he did mend a flatty and we finished up waiting for him! But the 2 Polynesian Airline representatives took every bag out of the plane, which was already running late for Samoa, to make sure my bag wasn't on it, and then sent telexes off to Apia and Auckland. Of course all my most important things were in it!

Finally we arrived at Sela's Guest House, and as Sela was out, were taken to our suite of rooms by two of her sons. She arrived home shortly after and came to greet us and bring some supper and, after every key, nail file, etc had been tried to open the fairly strong padlock on my one remaining bag (guess where the key was!) she went away and came back with a hacksaw blade. The others were all asleep by the time she and I between us (but mostly Sela) had sawed through it. How's that for friendliness? And we met it wherever we went, even if sometimes it was only smiles and hellos.

To me Tonga is a land of love, laughter, langour, warmth, and pawpaws; delicious food and good company from all over the world at Sela's huge dining table; lovely long beaches, palm-fringed, with warm, white coral sand; well-fed pigs and bantams trailing chicks, rooting and pecking out on the coral reefs for food; skinny dogs, cows and horses; churches and beautiful choral singing; patient, gentle, hard-working people who always have time to stop for others; "Tongan time" which means everything takes twice as long as you expect; riots of flower colours, ***Bougainvillea, Hibiscus, Pointsettia, Frangipani,*** etc; night noises - dogs fighting, bantam cocks crowing and, on Lifuka Is in the Ha'apai Group, church bells and native drums at 5 am each morning.

Oh! I forgot to mention **SHELLS** - afterall, that's what we went for! Well, apart from being a great place for a holiday where one can always expect the unexpected, it's a shell-collectors paradise, as you can see from the following list compiled by Meg from her and Gracie's goodies.

# Tongan shells, 1987.

Gastropods:-

*Atys naucum, A.cylindricus*
*Acmea pallida, A.saccharina*
*Astraea* sp (2 var), *A.semicostata*
*Auger hastula, A.nitida*
*Barbatia velata*
*Brachidontes striatulus*
*Bulla ampulla*
*Bursa rubeta, B.subgranosa*
*Capulus* sp
*Cantharus undosus*
*Cerithium obeliscus, C.monoliferous, C.auticulatum, C.nodulosum, C.sinensis, C.rhinoclavis*
*Conus striatus, C.arenatus, C.chaldeus, C.geographus, C.generalis, C.ebraeus, C.marmoreus, C.pulicarius, C.lividus, C.capitaneus, C.rattus, C.mustatellus, C.coronatus, C.litteratus, C.magus, C.planorbis, C.flavidus.*
*Cymatium muricinum, C.pileare, C.equatile, C.nicobarium, C.hepaticum, C.charonia, C.tritonis*
*Cypraea annulus, C.arabica, C.asselus, C.carneola, C.moneta, C.helvola, C.lynx, C.telina, C.aurica, C.isabella, C.nucleus, C.punctata, C.tigris. C.caputserpentis*
*Diadora mus*
*Distorsio anus*
*Drupa morum, D.ricinus, D.grossularia, D.rubusidaeus*
*Fusinus colus, F.nicobaricus*
*Haliotis varia*
*Hipponica pilosabia trigona, H.subrata*
*Hydatina physis*
*Latirus smaragdula, L.polygonus*
Keyhole limpet (2 var)
3 unidentified limpet species
*Malea pomum*
*Marginella* sp
*Mitra refusa*
*Tectarius pagoda*
*Littorina coccinea, L.undulata, L.pintade*
*Natica violacea*
*Nassa serta*
*Nerita exuvia, N.plicata*
*Obelisk vertigus*
*Oliva caerulea, O.mineacea*
*Pallium radula*
*Peristernia nassatula, P.fastigium*
*Pisania ignea*
*Pythia scarabaeus*
*Rapa rapa*
*Scutus unguis*
*Strigitella paupercala*
*Strombus mutabilis, S.gibberulus, S.rugosa, S.lambis lambis*
*Stomatella phymotis*

*Spirula spirula*
*Terebra areolata, T.crenulata, T.vertigus, T.hastula. T.albula*
*Thais intermedia*
*Tonna perdix*
*Trivia* (2 unnamed species)
*Trochus incrassatus*
*Tectus fenestratus, T.pyramis, T.lasimiatus*
*Turbo argyrostoma*
*Terebellum terebellum*
*Vanikora cancellata, V.helicoides*
*Vasum turbinella, V.turbinella cornigeum* (form)
*Vexillum unifasciatum*
*Triviastia exigna*

Bivalves:-

*Cardita crassicosta*
*Asiphas deflorata*
*Diplodonta terebella*
*Andara terruginea, A.granosa, A.scapha*
*Fimbria fimbriata*
*Chlamys pallium*
*Gafrarium tumidum, G.divaricatum*
*Donax cuneatus, D.faba*
*Glycymeris reevi*
*Fragum unedo, F.fragum*
*Mesodesmatium atactodea, M.striata*
*Mercenaria stimpsoni*
*Modiolus phillipinarium*
*Codakia tigrina, C.punctata*
*Lyocardium* sp (lyrate cockle)
*Trachycardium angulatum*
*Pecten pallium*
*Pallium radula*
*Tellina scobinata, T.staurella, T.virgata, T.tongana, T.charriessa, T.rugosa*
*Tridacna squamosa, T.maxima*

# A HISTORY OF CONCHOLOGY IN NEW ZEALAND

**(Copy of a talk given to the Wellington Shell Club, 1987)**

R. K. Dell

The Swede, Linnaeus, developed the binomial system of nomenclature for plants, and slowly adapted a similar system for naming animals. The basis of this system is the use of two latinised words: the first the generic name; and the second the specific name. The system for animals was judged to have been fully developed in the 10th Edition of his book "Systema Natura" published in 1758, and the names used in this work are accepted as the first names available for animals.

In 1758 only the Maori people knew anything about New Zealand shells since it appears that no shells were taken back to Europe from Tasman's voyage. Our New Zealand checklist does show a number of species described by Linnaeus, eg, ***Argonauta argo, Spirula spirula, Hiatella arctica, Hydatina physis,*** and ***Cavolina telesus***, but these were all originally described from other localities and were subsequently also found in New Zealand.

The first New Zealand shells to become known in Europe resulted from Cook's first two voyages. Although the naturalists Banks and Solander accompanied Cook on the first voyage, and Reinhold and George Forster were the naturalists on the second, no official expedition reports on the shells ever appeared. Most of the species described from these voyages resulted from the specimens collected by the sailors (rather than the scientists) which were sold to shell dealers and ended up in many different private collections. The actual descriptions appeared in a variety of European scientific journals or monographs (some of them quite obscure)

Thomas Martyn attempted to illustrate all of the species of shells collected on Cook's voyages in his magnificent "Universal Conchologist" (1784). Martyn was a book publisher who had trained a team of 9 young men to hand colour the plates for this work. The results are perhaps the best colour illustrations of shells ever produced (until the Japanese solved the reproduction from colour photographs). Unfortunately, Martyn did not manage to include all the species collected, and was not consistently binomial in his use of names, and his work was officially ruled not to be available for scientific nomenclature. A special application by NZ workers gained a dispensation for the use of some of Martyn's names for NZ shells, e.g. ***Modelia granosus, Cantharidus opalus, Astraea heliotropium, Maurea punctulata,*** and ***Cominella maculosa.***

Solander described some NZ species in "Catalogue of the Portland Museum" (1786) but these were not illustrated and there are arguments about the actual authorship of this work.

In 1872 (long after the voyages) Mortens summarised the species described as a result of Cook's voyages in a wide variety of publications. These included about 68 species, amongst them the common species of ***Cellana, Haliotis, Maurea, Buccinulum, Cominella***, and the common thaids and mytilids, as well as ***Turbo smaragdus, Turbo granosus, Cantharidus opalus, Austrofusus glans, Struthiolaria papulosa, Astraea heliotropium*** and ***Cookia sulcata***.

During the first half of the 19th Century many overseas expeditions visited New Zealand. Most published scientific descriptions of the shells collected but there were often long delays in the results appearing, they were published in a variety of languages, and were not always available in NZ until much later. The French expedition on the "Coquille" collected in the Bay of Islands in 1824. Lesson described the Mollusca which included ***Sigapatella novaezelandiae***. Another French expedition, under D'Urville on the "Astrolabe" circumnavigated the world between 1826 & 1829, and collected in Queen Charlotte Sound and at Thames. The naturalists Quoy and Gaimard described many of our common shells, e.g. ***Notoacmea pileopsis, Emarginula striatula, Maoricolpus rosea, Tanea zelandica, Muricopsis octogonus, Poirieria zelandica, Glycymeris laticostata, Pallium convexum,*** and ***Myadora striata***.

In the course of its round the world voyage from 1838 to 1842, the U.S. Exploring Expedition called at the Bay of Islands, Akaroa, and the Auckland Islands. The Mollusca were described by Gould, and included ***Antisolarium egenum, Potamopyrgus corolla*** and ***Dosinia lambata.***

In 1840, Dieffenbach travelled throughout the North Island and also visited the Chatham Islands. The shells collected were described by J.E. Gray (of the British Museum) in an appendix to Dieffenbach's "Travels in New Zealand" (1843).

Another French expedition, with the ships "Astrolabe" and "Zelee" (1837-1841) collected shells at the Bay of Islands, Akaroa, Port Chalmers, and the Auckland Islands. The naturalists Hombron and Jacquinot described some shells in 1854 - these included ***Margarella antipoda, Zethalia zelandica, Paratrophon patens,*** and ***Cellana strigilis***. Also in 1841, the British expedition under Sir James Ross on the "Erebus" and "Terror" visited the Auckland Islands as well as Campbell Island and the Bay of Islands. The shells obtained were not described by E.A. Smith until 1874!

In 1859 the Austrian geologist Hochstetter visited NZ on the

"Novara" and collected both fossils and living shells. ***Cirsotrema zelebori***, described by Dunker in 1866, and ***Dosinia greyi***, described by Zittel in 1864, resulted from these collections.

In the meantime, missionaries and early settlers had been sending specimens "home", often to the British Museum, and this traffic continued after European settlement. A steady stream of material collected by visitors and seamen also found its way through dealers into many private collections and were described in many publications in various European countries. One result was that the Types of many NZ species ended up scattered through European collections, and the descriptions were to be found in many publications in many languages. Finding the first description for a lot on NZ species has therefore been difficult and the discovery of unknown publications is one reason for the continual changes of names.

As NZ museums began to be established during the 1860s, better collections began to be built up in this country. Sir James Hector in the Colonial Museum (established in 1865 and to become in turn the Dominion and then the National Museum) saw the need for checklists of our fauna. He attracted F.W. Hutton to the museum staff for a few years. Hutton was an army engineer Captain who had attempted to farm flax in NZ (not very successfully). Hutton had a flair for producing catalogues of our fauna and prepared lists of birds, fishes, echinoderms, and marine molluscs. The quality of these catalogues, produced over a short period with only limited literature available, showed the promise that Hutton would later fulfil, though not in Mollusca. The catalogue of Marine Mollusca was published in 1873 and a more ambitious "Manual of New Zealand Mollusca" was published in 1880, after Hutton had moved to Otago. No figures were given, but this publication of 224 pages provided descriptions and summarised all our known species.

Interest in shells was growing amongst local settlers and a series of amateurs began to form collections, including Hamilton, Cooper, Murdoch, Bollons, Adams, and T.W. Kirk.

In 1890 a paper on new land and freshwater shells was sent to the editor of the "Transactions of the New Zealand Institute" by a Henry Suter, and more followed. Suter, who was to contribute so much to the study of conchology in NZ, was Swiss. His father was a prosperous silk merchant and Henry followed him into the business. He was an ardent collector of land a freshwater shells and had put together a large collection from Europe but representative of most parts of the world. This part of his collection is now in the National Museum. He had also been in contact with most of the major workers on Mollusca in Europe. Somehow his silk business failed and Suter arrived in NZ and set about farming in

southern Hawkes Bay (hence the common occurence of "Forty-mile Bush" as a locality for land snails in the Manual). Suter had had no formal training in science and never held a permanent position as a scientist. His farming venture did not prosper, and Hutton (impressed by Suter's papers) obtained a position as assistant manager at Mt Cook for him, (which coincides with the appearance of "Hooker Valley" as a locality). Impressed by the steady stream of papers, NZ workers encouraged Suter to turn his attention to the marine species, especially the smaller ones which were all but completely unknown. Between 1890 and 1913 he published 37 papers on NZ Mollusca, mainly in the "Transactions of the New Zealand Institute" and "Proceedings of the Malacological Society of London". Suter was supporting himself as a "consultant (in the modern sense of the word) taking on work for museums in identifying and cataloguing their collections. Hamilton (then Director of the Dominion Museum) persuaded the government to hire Suter to produce a manual. Suter's "Manual of the New Zealand Mollusca" was published in 1913, and the "Volume of Plates" in 1915.

Suter's manual was a magnificent accomplishment for its time. Few comparable areas in the Northern Hemisphere had a similar work available and there was nothing like it available anywhere in the Southern Hemisphere. Australia still has nothing to match it. Perhaps its greatest effect was on the workers who followed. New Zealanders have been in the forefront of molluscan systematics ever since. That a country the size of NZ should produce 3 workers of the calibre of Powell, Finlay and Marwick in the generation that followed publication of the manual is, in part, an indication of its value in summarising all that was known of NZ Mollusca. One other benefit was that it remained in print for a very long period of time and still at the original printed price. It was still available at the Government Printer for 30 shillings in the 1950s. In contrast, Powell's "New Zealand Mollusca" published in 1979 is already long out of print and virtually unobtainable.

The manual had some failures. Some were just a reflection of NZ's isolation, but some were due to Suter himself. For one thing, he thought he knew the whole fauna, and that there was little more to be collected. He also had some outdated ideas on systematic practice - he tended to ignore names that had been put forward if the species had not been figured. Of course Suter suffered from some of the general problems that beset all workers in systematics; a great deal of literature was still not available in NZ, although Suter's private library filled some gaps; most of the Type specimens were in overseas collections and a t that time no museum would lend type material. Few could afford the time or expense for a visit to European museums. Suter was rather resentful of criticism of his manual. The major critique of the systematics he had used came in a paper by Tom Iredale

published in 1915, and although time had shown that Iredale was generally correct, Suter was upset by the paper. This was Iredale's major direct contribution to NZ molluscan systematics; most of the rest of his work was carried out in the Australian Museum.

The period following the end of World War I saw a major flowering of work on Mollusca in NZ. W.R.B. Oliver, who produced only a few important papers, had published his first in 1915; Marjory Mestayer published in 1916; and J.A. Thomson wrote an important paper on our common limpets in 1919. But the period was dominated by 3 major workers: A.W.B. Powell (first paper in 1921), J. Marwick (first paper 1923), and H.J. Finlay (first paper 1924). Finlay virtually stopped working on Mollusca in 1931, but Marwick published until 1971 and Powell died only in 1987. Over this period these 3 three developed, interacted, changed emphasis, and acquired disciples and followers. Some general trends can be noted. Previous workers had looked to northern hemisphere faunas when looking for genera to fit our species. An immense Tertiary fauna, for example, was known from the Pans Basin and this fauna had been beautifully illustrated and was available in NZ. Under Iredale's influence, NZ workers began to realise the isolated nature of southern faunas. Study of our Tertiary Mollusca was also showing that many of our living species had a long fossil history in this country. Powell, Marwick, and Finlay all studied both fossil and living material, a practice that was not common overseas.

Iredale and Finlay had worked together on a "Further Commentary" on Suter's manual and although Finlay published this under his own name in 1927, the paper bears the imprint of Iredale's philosophies. It showed a strong tendency towards tightening up procedures, it applied the rule concerning priority and the firm establishment of type species for genera, and it floated the concept of geographic subspecies.

Up to this time, the standard of illustrations of shells in scientific publications produced in NZ was low, especially those of smaller forms. Powell and Marwick, although using completely different styles, were to change this dramatically, although Finlay still had to rely largely on fairly primitive photographic methods.

Finlay suffered from a major physical disability. He was a polio victim and was confined to a wheelchair, but showed a great courage and persistence in collecting fossils. He had a brilliant academic career in Otago, but growing up in the depression, could not get a scientific position. He had wide interests, particularly in music and philately, and was renowned for his acid tongue and perhaps even more acid pen. e published on Mollusca until about 1931 and about this time began to study Foraminifera for an oil company, and in 1937

was appointed micropalaeontologist to the NZ Geological Survey. His collection of Mollusca was sold to the Auckland Museum.

Powell was a commercial artist who became interested in shells, and published his first paper in 1921, when he was 20. He had no formal training in science but on the basis of his published work was appointed conchologist at the Auckland Institute and Museum when the new building was completed. Powell remained in this institution all his working life. He had a remarkable output of papers covering many fields. Many of his earlier papers dealt with small marine Mollusca and his beautiful illustrations of these small forms are still noteworthy. He carried out a series of revisions of families and genera, particularly ***Penion***, the Volutidae, Cassidae, ***Buccinulum***, and ***Marginella***. In 1930 he began a series of papers on ***Paryphanta*** which brought this group of large snails to the attention of scientists and amateur alike. In 1933 he published on Subantarctic shellfish and this work lead him on to a series of papers on Subantarctic and Antarctic shellfish, culminating in a Checklist in 1960. In 1937 he published a large paper on animal communities in Auckland and Manukau harbours and a large bulletin on small forms from off the Three Kings Is. The latter was our first real indication of the very rich fauna of that region. In 1938, Powell published a major paper on ***Placostylus***. His first major paper on Turridae appeared in 1942 and he contributed some of his best work (unfortunately not all published) in subsequent years on this family.

Powell worked extensively in the field. He was rather retiring and shy until one knew him. He was extremely helpful to younger workers.

John Marwick spent his whole life as a palaeontologist in the NZ Geological Survey. He published his first paper in 1922 and in 1923 began a series of revisions covering both living and fossil forms. He was the first NZ worker to consistently trace the lineages of our living shells through their fossil history. His major family revisions covered the Glycymeridae, Volutidae, Veneridae, Struthiolariidae, Naticidae, Cardiidae, and Turritellidae.

Marwick looked and sounded like a typical cartoon-like NZ farmer, except when you listened to what he was saying, you realised he was a great palaeontologist. He was modest and helpful, a man who never spoke an ill word about anyone. The only person he was hard on in print was himself. It takes a great deal of honesty and courage to write as he did in one of his papers dealing with a difficult group of bivalves: "There has been a good deal of confusion, for much of which the writer must plead guilty...".

Marwick taught himself a method of drawing shells in pen and

ink which was cheap to produce and to print, but which conveyed the essence of a species to other people. This was a time of economic pressure when economies were needed on all sides - even in publishing.

A number of lesser workers were active in the period between the wars. Oliver's work has already been mentioned. Miss M.K. Mestayer worked for many years as a part-time assistant at the Dominion Museum. She published a few papers, but was scathingly criticised in print by Finlay. C.R. Laws was another casualty of the depression who could not find a position in science until toward the end of his career and spent most of his life lecturing in Teachers' Training Colleges. He was one of the first workers to take a real interest in tiny fossil shells and is best known for his revision of the family Pyramidellidae. He published mainly between 1930 and 1940.

The period immediately following World War II saw C.A. Fleming (who died in 1987) take up a position with the NZ Geological Survey and the writer became conchologist at the Dominion (later National) Museum. Both had been encouraged by Powell in Auckland as schoolboys and both received a great deal of support from Marwick in the earlier stages of their careers. Of course both Marwick and Powell continued working during this period, and indeed published some of their best work.

A new series of younger workers began publishing in the 1960's: Beu (first paper 1965), Ponder (1965), Rudman (1968), Climo (1969), and Marshall (1977), and Cernohorsky, who came to Auckland Museum as Powell's replacement, published his first paper on NZ Mollusca in 1970. Both Ponder and Rudman later took up positions in the Australian Museum, Sydney.

The period since 1950 has been a very active one in NZ conchology, but it is too recent to evaluate the work done. Some general trends are obvious, however. Earlier collections of deep sea animals had been fairly sparse. The "Challenger" obtained some material in 1874, and in 1906 the shells obtained from 110 fathoms off Great Barrier Is were described. Powell's paper in 1937 on the Mollusca from off the Three Kings Is showed what the future might bring. The Chatham Islands Expedition in 1954 showed that even using small research ships, we ourselves could collect from the deep sea. A marked trend since 1950 has been a sudden, great expansion of our knowledge of deep sea shellfish. Several thousand new species await description, and extensive collections from off the shelf from the far north to the far south of our region show that critical revisions of our described forms are required.

There has been a movement back to looking critically at our NZ Genera, comparing them with forms from other parts of the

world. This move has been aided by several important developments. Not only have we obtained much more scientific literature in NZ, but easy photocopying means that we can obtain facsimilies of rarer works when we need them. There has been a world-wide development to change regulations to allow type and other specimens to be sent on loan, and these can be sent rapidly by air. At the same time, air travel has allowed our workers to visit the larger overseas museums more readily. One other scientific technique allows us to see fine detail much more clearly; the scanning electron microscope has revolutionised the study of radulae and minute forms.

In conclusion, some developments in relation to amateur collecting may be noted. The publication of Suter's manual in 1913 may not have assisted amateurs all that much. Bucknill's small book published in 1924 brought Powell's abilities as an artist to a wider audience. Powell's handbooks, the first published as "The Shellfish of New Zealand" in 1937 and the fifth edition, renamed "Shells of New Zealand" in 1976, all of which incorporated a checklist of the fauna and which included illustrations of an increasing number of species, became the bibles of the amateur collectors. The value of this series of handbooks to both scientist and amateur alike cannot be over-rated. Powell's own attempt at a manual in 1979 is another major landmark.

The work of the 2 established shell clubs in NZ has brought collectors together. The Auckland club began as a boys club in 1930 and was transformed into a club for adults as well in 1935. The Wellington club began in the 1950s. Charles Fleming and the writer were both members of the Auckland club as schoolboys, while Alan Beu and Winston Ponder first joined the Wellington club while they were still at school. However, the stimulation that club activities may have given these 4 to become scientists in this field is a spin-off value. Bringing together groups of people with a common interest in a hobby which can be pursued at a wide variety of levels has been of much wider significance.

# A TRIP TO STEWART ISLAND IN MARCH 1986

Meg Taylor

Our journey across to Stewart Is was decidedly "bumpy" and it took a supreme effort to "hold it all together", especially as so many people were "out for the count". I couldn't help thinking, what are we doing this for? - the answer of course was that shell collectors are a dumb lot anyway, always hopeful.

As we got nearer to the island the weather had improved, so after we were fortified with the inevitable cuppa, we decided to have just one quick look at Horseshoe Bay, where we were to spend the next week.

Would you believe the beach was littered with great heaps of seaweed after a very unusual north-easterly gale, which blew straight into the bay, leaving behind hundreds of shells. We raced from one spot to another to find ***Modelia granosa***, beautifully coloured and all newly dead; ***Maurea punctulata, M.pellucida, M.waikanae***, as well as huge ***Gari lineolata*** and ***G.hodgei.*** All thoughts of "wobbly" legs and aching heads were banished as we returned to our cabin to collect more and more bags to be filled.

The next day most of the shells had gone, so I spent a few hours around the rocks under the wharf. There I found a beautiful live ***Buccinulum pertinax, B.nassoides***, and ***B.littorinoides***, as well as a few ***B.lineum***.

We walked into Oban, a distance of 3 kilometres and on to Golden Bay and across to Deep Bay. Here we found more ***Buccinulum nassoides***, and many ***Zeatrophon ambiguus***, with a few ***Buccinulum littorinoides flava***. The walk was beautiful through the bush and around the bays to Ringaringa, but a very long way. Ringaringa had nothing to offer as the tide seems to come right up to the road.

Bush walks were the order of the day with just quick looks at the beach until the last few days of our stay when shells were drifting in again. ***Zeacolpus symmetricus*** littered the beach, with a few ***Z.vittatus;*** plenty of ***Venerupis largillierti*** and a few tuatua and pipi, ***Myadora striata, Tawera marionae,*** and ***Thracia (Hunkydora) australica novozealndica***. As this lot cleared, the "big ones" were left: 1 ***Pecten novaezelandiae rakiura*** 15 x 12.5 cm, a paua 16.5 x 12.5 cm, and one perfect ***Maurea tigris,*** a blue mussel (***Mytilus edulis aoteanus***) 12.5 x 7.5 cm, and a brachiopod ***Terebratella sanguinea. Tanea zelandica*** and ***Trochus tiaratus*** were also of a large size.

The following species were also obtained during our stay:

*Chlamys dieffenbachi, C.delicatula* (cray pot)
*Soletellina siliqua*
*Gari stangeri*
*Scalpomactra scalpellum*
*Chione stutchburyi*
*Modiolarca impacta*
*Aulacmya maoriana*
*Cellana strigilis rediviculum*
*Pileopsis sternus*
*Struthiolaria gigas, S. papulosa* (large)
*Xenophalium pyrum stadiale* (large; cray pot)

# COLLECTING SHELLS BY DREDGING

D. W. Watson

Dredging can be fun, if you have access to a boat. You can learn so much about the different types of seabed structures and where different species live. For instance, ***Cuspidaria, Neilo***, and ***Dentalium*** prefer the "blue mud' which tends to occur between 80-100 ft (25-30 m), whereas ***Murex***, and ***Poirieria*** are found on many different substrates, except ***M.octogonus*** which is only found in areas with strong tidal flows and a rubble or rock bottom.

Things you will need:-
You need about 3 or 4 buckets, quite a few ice cream containers, and a selection of tubes. You will also require 3 different mesh-sized sieves, gloves, a waterproof pen (or pencil), and labels. It is important to put the depth, date, locality, and type of bottom structure on the containers as you collect them.

## Dredging

When the dredge is put over the side of the boat, feed out the rope until the dredge hits the bottom, then move the boat forward, feeding the rope out until you think you have sufficient. Hold the rope when it tightens and you should be able to feel if it is dredging or bumping along the bottom. If it appears to be bumping, the chains are not adjusted properly, and if you feel nothing, the boat could be moving too fast or there are strong tidal currents lifting it off the bottom. The dredge does not have to drag far before it is full; and there is no sense in damaging the bottom more than is necessary. To recover the dredge, reverse the boat slowly, pulling in the slack rope at the same time. If you have a winch, so much the better, as a day's dredging can be hard on the muscles! When the dredge reaches the surface, keep the bucket handy and pour the contents straight into the bucket. At first sight you will probably think "what a heap of junk", but scoop out about a quarter of a sieve-full and wash away the mud over the side of the boat. Partly submerge the sieve only as any more will wash out most of the hard-earned catch, and shake the sieve around to clean the specimens. Sort out what is to be kept and throw the rest back.

When I'm dredging, I often get pushed aside, or told that "this is my lot" when someone finds something special in the sieve. Another common cry is "bet you don't know what I've found" or just squeals of delight, followed by "what a beautiful specimen".

Do not leave a bucket of dredgings around without cleaning for more than a couple of days as the shells in the mud will

go black and discoloured from the build-up of anaerobic bacteria.

One important thing to always remember - never tie the end of the dredge rope to the stern bollard or anything else on the aft of the boat. Just tie a buoy on the end. If the rope is too hard to hold directly, take a couple of turns around the bollard and then hold it. Also, it is not wise to dredge in strong currents. The reason is that if the dredge becomes caught on a rock or foul ground and the tide is running, it will very quickly become impossible to untie the rope because of the strain on it. If the rope is tied to the stern, the current will drag the boat under stern first because the outboard will have no steerage. By having a buoy on the end of the rope, it is simple to throw it over and come back for it when the tide has slackened.

Dredges come in all shapes and designs, but mine is made of steel, and the shape of an ice cream cone, covered in gauze. There are 3 chains on the front, one being longer than the other 2, which are then tied to it with string. If the dredge gets caught, the string will break and the dredge will swing free.

The rope should be about 300 ft (100 m) long and 10mm thick which will allow dredging to about 100 ft (33 m), since a general rule is to use around three times the length of rope as the depth of water.

## BOOK REVIEW - BETWEEN THE TIDES, NEW ZEALAND SHORE AND ESTUARY LIFE, BY MIKE BRADSTOCK. PUBLISHED BY REED METHUEN. PRICE $29.95

**Jill Burnett**

This book was lent to me by a relation who knew of my interest in shells, and as it is a fairly new book on the market, I have written down my impressions of it for you.

It is a hard-cover book, printed on good quality paper, consisting of 158 pages of text, plus 24 pages of colour photographs. Apart from the photographs, the book is also illustrated throughout with black and white line drawings by Vivian Ward, and the occasional black and white photograph. The drawings are clear and detailed, but this is not a book for use as reference or identification purposes. Rather it aims to give the reader a broad overall picture of marine life in the intertidal zone, particularly emphasising the way the various plants and animals live together and depend upon each other. Scientific names are kept to a minimum, and the book is obviously not intended for the experienced collector or enthusiast. It has chapters covering algae, salt marshes, crabs and crustaceans, molluscs, echinoderms, worms, fishes, and animals that don't look like animals. At the back there is a bibliography of reference works for each chapter, a glossary of the more technical and scientific terms used, and an index.

It seemed to me that this book would be particularly suitable for a novice collector (whether of molluscs or some other form of marine life), or to stimulate and encourage interest in a young person.